

differs in that electronic modules **2** are assembled to plate **14** by introducing a resin in slot **26** between module **2** and the corresponding aperture **16**. In the variant shown in FIGS. **12** and **13**, the adhesive is introduced, for example by using a syringe, into slot **26** so that a small strip of adhesive **70** forms an adherent bridge between the lateral wall **17** of aperture **16** and the edge of substrate **12** of the electronic module. This strip of adhesive can be added once the electronic module has been placed in the corresponding aperture in the plate or before the module is brought. In this latter case, a strip of adhesive is applied against lateral wall **17** of aperture **16**. The strip of adhesive can be added in a viscous liquid state or in a paste like state, or even in a solid state and then made soft or viscous by applying heat. Strip **70** can be formed by any resin that adheres sufficiently well to frame **14** and the electronic module, in particular to the substrate **12** thereof, to hold the electronic module in the corresponding aperture and thus enable assembly **68** to be handled, without the electronic modules coming out of their respective apertures. The material connection made beforehand between the electronic module and plate **14** is important for holding the electronic module in a given position during the initial handling operations and also during the various steps of the method according to the invention, which will be described below.

**[0069]** The variant of FIGS. **12** and **13** is characterized in that the strip of resin **70** defines a small bridge in slot **26**, i.e. between the edge of substrate **12** and the lateral surface **17** of plate **14**. This obviously does not mean that resin strip **70** cannot also extend partly over one or other of the top or bottom surfaces of substrate **12** and also over the top surface of plate **14**. However, it will be noted that, preferably, the resin for securing the module is entirely inside aperture **16** and does not therefore cause any excessive thickness relative to the plate.

**[0070]** The variant shown in FIGS. **14** and **15** differs in that the assembly **72** includes drops of resin for securing electronic elements **2** to plate **14**. These drops **74** are preferably added to the side of substrate **12** where the electronic elements are arranged. The drops of resin **72** form a joint essentially between the lateral wall **17** of aperture **16** and the top surface of substrate **12**. This does not, however, mean that drop **74** flows into slot **26**. The two variants of this fourth embodiment of an assembly according to the invention are thus relatively close to each other. In this fourth embodiment, a resin is applied locally to create a bridge or joint between the electronic module and the peripheral area of the corresponding aperture. This bridge or joint is preferably located inside aperture **16** so that it does not cause any excessive thickness relative to the thickness of frame **14**, which is approximately equal to the maximum thickness of electronic module **2**.

**[0071]** It will be noted that the resin can be applied over several distinct edge zones of module **2**. In FIGS. **12** and **14**, the resin is only deposited in two diametrically opposite zones. Evidently, more zones could be provided, in particular, four zones approximately at the four corners of aperture **16**. It will also be noted that the distinct zones can be relatively short as shown in FIGS. **12** and **14**, or extend over a longer distance, for example, along the two small sides of rectangular aperture **16**.

**[0072]** In all of the embodiments of the assembly according to the invention described above, the electronic module can have various configurations. This electronic module can have electronic elements on both sides of substrate **12** so that the substrate **12** is located in the median area of the corresponding

aperture. Some elements can also be arranged in apertures in substrate **12** or at the periphery thereof, to prevent their respective thickness being added. In this latter case, it is also possible for an electronic element to pass through the substrate and come out of both sides of the substrate. Preferably, the thickness of plate **14** is approximately identical to the thickness of the electronic module; but this is not a compulsory requirement. Some elements, in particular an electronic display, have a greater thickness than that of plate **14**. Finally, it will be noted that various embodiments and/or various variants could be combined with each other.

**[0073]** Two main variants of an intermediate product produced during the card manufacturing method according to the invention will be described below with reference to FIGS. **16** and **17**.

**[0074]** The intermediate product **80** shown in FIG. **16** is formed by an assembly according to the invention, said assembly including a pierced plate **14** and electronic modules housed in corresponding apertures **16**. Substrate **12** of module **2** rests abutting against projecting parts arranged at the periphery of apertures **16**, as described with reference to the first embodiment of an assembly according to the invention. Initially, electronic modules **2** and pierced plate **14** are assembled to each other by an adherent film provided between the projecting parts of plate **14** and substrates **12** of the electronic modules. In another variant, modules **2** are secured to plate **14** by adding drops of resin or strips of resin, in particular in the slot remaining between substrate **12** and wall **84**. It will be noted in FIGS. **16** and **17** that the example chosen for the assembly according to the invention is given by way of non-limiting illustration. In fact, any assembly according to the invention can form an intermediate product by adding a filling material **82** in the space remaining in apertures **16**. In the variant of FIG. **16**, the filling material **82** approximately fills each aperture **16**, without, however, covering the top and bottom surfaces of plate **14**, or the surfaces of electronic display **6** that have the same thickness as plate **14**. Filling material **82** fills at least most of the space remaining in apertures **16**. This filling material is added in viscous liquid form and inserted in the apertures by various means available to those skilled in the art, in particular by casting pouring or any other technique known to those skilled in the art. It will be noted, in particular, that it is possible to envisage introducing filling material **82** by an injection technique, by pressing the mould cover on plate **14**, the cover mastering the top surface of electronic display **6** during injection. One variant can be envisaged wherein electronic display **6** is also covered by the filling material, which is then transparent. Once again, the examples given are in no way restrictive. In the variant of FIG. **16**, the filling material is added entirely through the top surface of frame **14**, i.e. on the opposite side of substrate **12** to electronic module **2**.

**[0075]** Filling material **82** can be formed by various suitable materials, which preferably have some elasticity once they have solidified. Preferably filling material **82** has a good adherence with the lateral walls of openings **16**. In particular, a synthetic or natural resin forms material **82**. By way of example, material **82** can be a polyurethane resin or a PVC resin. Material **82** could also be formed by an adhesive that hardens at ambient temperature or reacts, for example, to ultraviolet light (UV). In another variant that could be envisaged, material **82** could be formed by a gel or silicon-based material.